

## Unit Planning Guide: Geometry Unit 3 of 8

<b>Unit Title:</b> Triangle Congruence	<b>Pacing (Duration of Unit):</b> 20 days
<b>Grade:</b> Geometry	<b>Buffer Day(s):</b> 5 days

### Desired Results

#### Transfer Goals (Priority practice standards in **bold**)

*Students will be able to independently use their learning to:*

- MP.1. **Make sense of problems and persevere in solving them.**
- MP.2. Reason abstractly and quantitatively.
- MP.3. **Construct viable arguments and critique the reasoning of others.**
- MP.4. **Model with mathematics.**
- MP.5. Use appropriate tools strategically.
- MP.6. Attend to precision.
- MP.7. **Look for and make use of structure.**
- MP.8. Look for and express regularity in repeated reasoning.

#### Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

##### Prerequisite Standards:

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##### Standards (Priority Standards in **bold**):

- **G-CO.7 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.**
- **G-CO.8. Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of**

##### WIDA for English Language Learners

Standard 1: ELLs **communicate** for **Social** and **Instructional** purposes within the school setting

Standard 3: ELLs **communicate** information, ideas and concepts necessary for academic success in the content area of **Mathematics**

In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need: 1.) this curriculum map, 2.) a list of their ELLs and their proficiency levels, and 3.)

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### congruence in terms of rigid motions.

- G-CO. 6 Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.
- G-CO.9 Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*
- G-CO. 10. Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to  $180^\circ$ ; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*

appropriate language function expectations and scaffolds or supports.

### Meaning (\*Mostly assessed through Performance Tasks/Assessments)

**Big Ideas:** (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)

- Knowing the attributes of triangles (sides & angles) allows students to determine congruency relationships between corresponding parts of figures.
- Congruence postulates will then give students insight into congruence of other polygons.

**Essential Questions:** (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)

- In what ways do duplication devices (copiers, fax machines, etc) employ congruence?

### Acquisition (\*Mostly assessed through traditional summative assessments)

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**Knowledge:** Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.

*Students will know ...*

- **corresponding** parts of congruent triangles are congruent.
- that theorems and postulates can be used to prove congruent relationships.
  - 3 Theorems - Third angles; **Hypotenuse Leg** (HL); Angle-Angle-Side (AAS).
  - 3 Postulates - Side-Side-Side (SSS); Side-Angle-Side (SAS); Angle-Side-Angle (ASA).
- that not all combinations of parts guarantee congruency.
- definition of **isometry** as transformed congruent figures.

**Bold words are key academic vocabulary**

**Skills:** The discrete skills and process students should be able to use independently.

*Students will be skilled at:*

- writing congruency statements given a diagram or corresponding parts. (*Knowledge*)
- justifying that triangles are congruent using the 3 postulates and 3 theorems (*Application*)
- proving that rigid transformations maintain congruency. (*Evaluation*)

### Resource Suggestions:

McDougal Littell  
Geometry 2007

Chapter 4: Congruent Triangles

4.2  
4.3  
4.4  
4.5  
4.6  
4.8

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